

CLAIMS

1. A method for producing a polyethylene terephthalate for molding, comprising:

- 5 (1) a condensation step of condensing bis(2-hydroxyethyl)terephthalate having an ion content of 10 ppm or less and an acid value of 30 mgKOH/g or less to produce an oligomer having an average polymerization degree of 4 to 10,
- 10 (2) a melt-polymerization step of melt-polymerizing the oligomer to produce a prepolymer having an intrinsic viscosity of 0.50 to 0.65, and
- (3) a solid-state polymerization step of crystallizing pellets of the prepolymer and then solid-state
- 15 polymerizing the prepolymer at a temperature of 190 to 230°C to produce a polyethylene terephthalate having an intrinsic viscosity of not lower than 0.65.

2. The method of claim 1, wherein the

20 polyethylene terephthalate obtained by solid-state polymerization has a carboxyl end group concentration of 10 eq/ton or less and a cyclic trimer content of 2,000 ppm or less.

25 3. The method of claim 1 or 2, wherein the optical density of bis(2-hydroxyethyl)terephthalate is 0.000 to 0.010.

4. The method of any one of claims 1 to 3, wherein

30 the purity of bis(2-hydroxyethyl)terephthalate is not lower than 95 wt%.

5. The method of any one of claims 1 to 4, wherein bis(2-hydroxyethyl)terephthalate contains 0.5 to 5

mol% of isophthalic acid based on an acid component of bis(2-hydroxyethyl)terephthalate.

6. The method of any one of claims 1 to 5, wherein
5 in the condensation step, condensation is performed at a pressure of 7 to 70 kPa and a temperature of 220 to 270°C.

7. The method of any one of claims 1 to 6, wherein
10 in the condensation step, condensation is performed in the presence of a polymerization catalyst and a stabilizer.

8. The method of any one of claims 1 to 7, wherein
15 the carboxyl end group concentration of the prepolymer is 10 eq/ton or less.

9. The method of any one of claims 1 to 8, wherein
20 in the melt-polymerization step, melt polymerization is carried out eventually at a pressure of 25 to 140 Pa and a temperature of 270 to 290°C.

10. A polyethylene terephthalate for molding,
having:
25 (a) an intrinsic viscosity of not lower than 0.65,
(b) a carboxyl end group concentration of 10 eq/ton or less,
(c) a cyclic trimer content of 2,000 ppm or less, and
(d) a cyclic trimer content after molten and kept at
30 290°C for 30 seconds of 3,500 ppm or less.

11. The polyethylene terephthalate of claim 10,
wherein the carboxyl end group concentration (b) is 6
eq/ton or less.

12. The polyethylene terephthalate of claim 10,
wherein the cyclic trimer content (c) is 1,000 to 1,800
ppm, and the cyclic trimer content after molten and kept
5 at 290°C for 30 seconds (d) is 2,500 to 3,500 ppm.